United States Department of Agriculture

Forest Service

Draft Decision Notice

Upper Briggs Restoration Project

Wild Rivers Ranger District, Rogue River-Siskiyou National Forest

Josephine County, Oregon

Township 35 South, Range 8 West, Sections 30, 31, and 32; Township 35 S, Range 9 W, Section 25; Township 36 S, Range 8 W, Sections 4-11, 14-23, 27-29; Township 36 S, Range 9 W, Sections 1 and 2; Willamette Meridian

April 2019

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Predecisional Administrative Review Process:

This *draft* Decision Notice is made available with the Environmental Assessment for the Upper Briggs project pursuant to 36 CFR 218.7(b). The timeframe for the opportunity to object to this project will begin with publication of a legal notice in the Grants Pass Courier newspaper. The Forest anticipates that the legal notice will be published on Thursday April 18th. See page 13-14 for more information on the predecisional administrative review process.

For information contact:
Anne Trapanese, Environmental Coordinator
Rogue River Siskiyou National Forest
Anne.trapanese@usda.gov
Phone (541)560-3433

Decision Notice

Table of Contents

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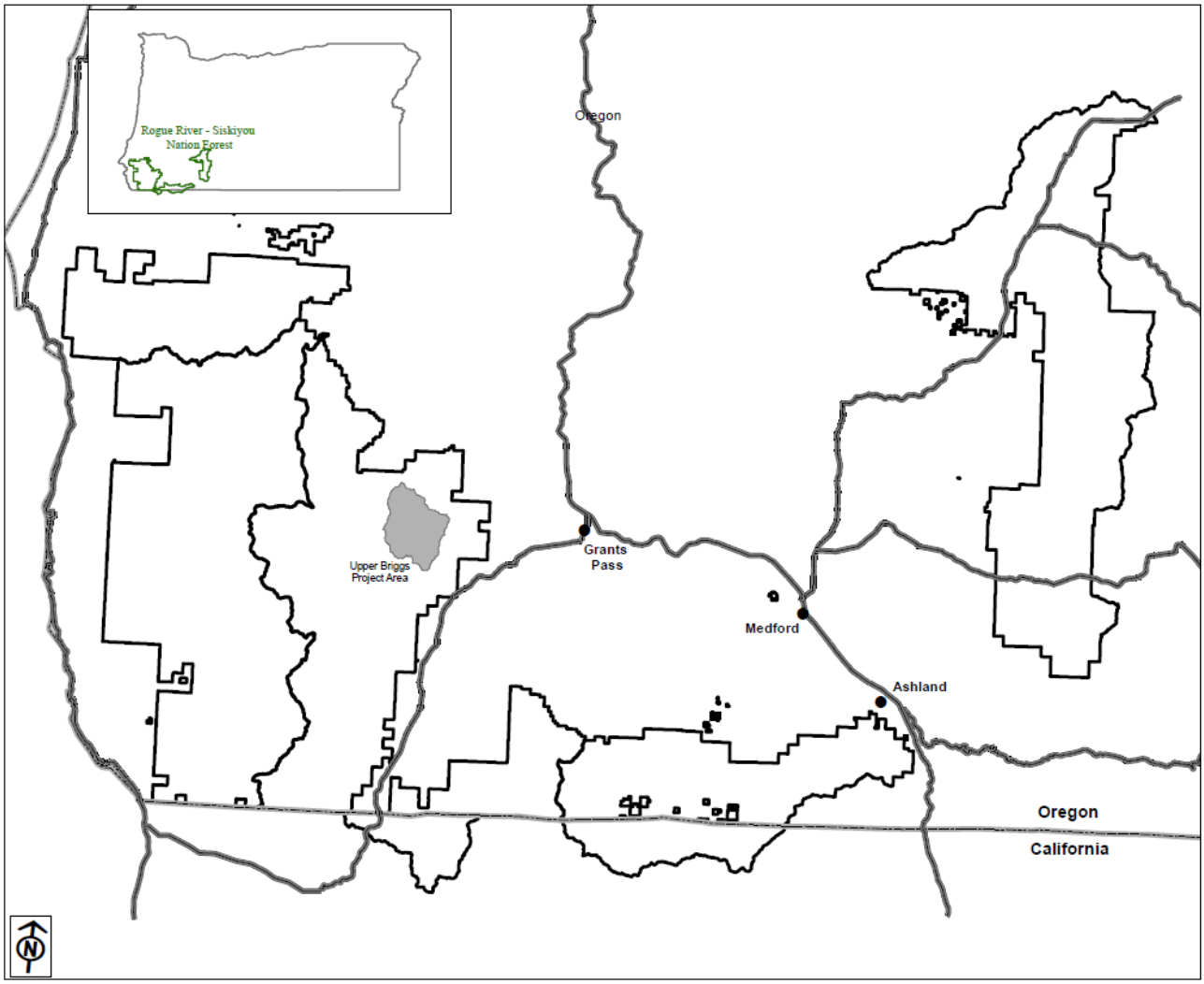


Figure 1. Location of the Upper Briggs Project area, Rogue River Siskiyou National Forest.

DECISION NOTICE
Upper Briggs Landscape Restoration Project

USDA Forest Service

Wild Rivers Ranger District, Rogue River-Siskiyou National Forest

Decision

This decision notice documents my proposed decision and rationale for the selection of Alternative 2, the proposed action of the Upper Briggs project environmental assessment (EA). I have reviewed the EA for the Upper Briggs project and the information contained in the project file. I have determined that there is adequate information to make a reasoned choice among alternatives. It is my decision to select the proposed action, including associated connected actions, project design criteria and mitigation measures as described in the EA (chapter 2), and Appendix B.

I have decided to implement the proposed action. The proposed action will conduct landscape and watershed restoration on approximately 4,017 acres on the Wild Rivers Ranger District to improve the overall resiliency of the watershed to short-term natural disturbance (fire, drought, and storms) and long-term climate-change through vegetation management, habitat and plant restoration, fuels management, and roads management. The project area is located approximately eleven miles west of Grants Pass, Oregon. Thinning activities would focus on removing subdominant trees (primarily Douglas-fir) from the understory to achieve desired stand densities, while leaving all dominant (largest, oldest) overstory trees and a multi-layered structure. Thinning from below, radial thinning around large trees, variable density and small group selection would be used, based on the existing stand structure. The small group selection openings would allow for natural establishment of shade-intolerant pines and cedars for long-term overstory diversity. Planting of root disease resistant species (pines and cedars) will also occur in pockets of laminated root rot and other root diseases. Natural fuels and slash from thinning treatments would be cut and scattered, then underburned where fuel loading may effectively be treated by this method. Where fuel loadings are high (>20 tons per acre), slash and thinning material that is not sold would be piled and burned. Prior to underburning, duff rings around large legacy trees will be raked away to prevent excessive heating of the cambium that might damage or kill the tree.

Implementing the proposed action also includes implementing the connected action approximately 3 miles of temporary road (EA pp. 19, 31). A map of temporary road locations in available in Appendix C of the Final EA.

Decision and Rational

The purpose of the proposed action is to reach desired conditions by improving the overall resiliency of the Upper Briggs Creek watershed to short-term natural disturbance (fire, drought, storms) and long-term climate change (EA, p, 9). The specific objectives of the proposed action are to:

1. Strategically manage fuels to reduce the risk of large stand-replacing fires and reintroduce controlled fire use to the landscape.
2. Maintain and restore structural and vegetation diversity (species composition and successional stages) as appropriate to abiotic and biotic site characteristics in upland areas (prolonging the persistence of legacy trees, accelerating development of later seral forest structure; restoring pine/oak, meadow habitats and rare plant populations).

3. Conserve and enhance habitat for the northern spotted owl and other wildlife species.
4. Maintain and restore the species composition and structural diversity of plant communities in riparian reserves and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface, bank erosion, and channel migration; supply amounts and distribution of coarse woody debris sufficient to sustain physical complexity and stability (Aquatic Conservation Strategy objective 8).
5. Re-establish more natural subsurface flow patterns and improve overall watershed function.

Reduced fire frequency over many decades has allowed extensive development of a dense, structurally homogenous secondary forest layer. The smaller, shade-intolerant trees are less fire resistant than large old pines, cedars and Douglas-firs. The understory beneath now receives little sunlight, often has few shrubs and herbaceous plants, and contains a thick layer of duff built up from conifer needles, cones and twigs. The Upper Briggs project seeks to restore the ecological and historic values of the area through thinning of the shade-intolerant trees to reduce competition and promote re-seeding of pine and cedar and introducing fire back to the landscape on regular intervals.

The Upper Briggs EA provides specific rationale for each component of the proposed action and documents the environmental analysis and conclusions upon which this decision is based.

I selected the proposed action because the project thinning treatments proposed would accelerate growth by opening growing space and reducing competition for resources. This would have a beneficial effect of increasing the diversity of vegetation, reducing the risk and effects of insects, disease, and wildfire, and accelerating the development of late seral forest structure (EA, p. 237). Ponderosa pine would be more prominent (EA, p. 238). Stands that receive fuels reduction treatments will have a higher percentage of fire resistant pine and hardwoods. The mature/late seral cover type would be less susceptible to insect and disease influences, fire and density related mortality. Treatments would reduce encroachment of meadow systems (EA, p. 239).

Planting of ponderosa pine, sugar pine, and black oak would occur in the openings created by small group selection. Temporary roads provide access to treatment areas, but are generally short, usually open for one season during a treatment operation, and decommissioned after use.

Selecting the no action alternative would result in stand structure and composition continuing to move away from the historic condition and towards multi-strata stands increasingly dominated by small understory trees. Individual large and medium diameter conifers would continue to be stressed by limited resources and become more susceptible to mortality from insects and disease. Without thinning, species conversion would continue to change from the historic stands dominated by ponderosa pine and sugar pine to domination by Douglas-fir. In the absence of group selection treatments, pockets of root disease would continue to spread at current rates and the stands would retain their current age class distribution.

Briggs Creek RTV Plan- this decision would also approve the Briggs Creek RTV Plan as a connected action. Twenty-two high priority sites and associated connectivity areas were identified to provide additional habitat for red tree vole conservation outside of reserve land-use allocations in the Briggs Creek watershed. These high priority sites (HPS) covering approximately 764 acres and associated connectivity areas covering approximately 1,016 acres would be managed consistent with red tree vole conservation. (EA Appendix B)

The EA contains analysis about treatment in riparian reserves, throughout Chapter 3. I wish to clarify what can be treated in these areas:

Huff 2016, page 25-27 states that any activities within riparian reserves that have been identified as land-use allocations managed consistent with red tree vole persistence (LUA-RTV) or connectivity areas delineated in the Briggs Creek RTV Plan should not trigger pre-disturbance surveys for RTV as identified in the survey protocol (Huff et al 2012).

From Huff et al 2012, activities that would trigger pre-disturbance surveys are those that meet all three of the following criteria:

1) The project is within the RTV Survey Zones (Upper Briggs is entirely within the Xeric Zone)
2) There is suitable habitat within the planning area that may potentially contribute to a reasonable assurance of persistence of tree voles. Suitable habitat in the Xeric Zone and more specifically the Briggs Creek watershed are stands that meet both:
    a. Quadratic Mean Diameter (QMD) ≥ 16" or Arithmetic Mean Diameter (AMD) ≥ 14"

AND

    b. The general habitat in the stand is mature, old growth, or older mixed-age conifer (typically over 80 years in age) with Douglas-fir with multi-layered canopies and heavy limbs or palmate branch clusters capable of supporting nests OR conifer-dominated mixed conifer-hardwood forests with canopy closure of intermediate, co-dominant and dominant trees ≥ 60% **and** with two or more superdominant conifer trees per acre with foundations for rtv nests (e.g. large limbs, palmate branch clusters, well developed crowns, cavities, broken tops, forked trunks, multiple leaders, or dwarf mistletoe brooms). Superdominant trees typically have crowns that extend above the general stand canopy and have large branches in the upper canopy of the dominant trees in the stand.

3) The project disturbance is a habitat disturbing activity that has the potential to cause a "significant negative impact on the species' habitat or the persistence of the species at thte site" (USDA and USDI 2001: S&G 22). This is further defined in Huff et al 2012 page 10 which states that 'activities that would remove or modify the intermediate, co-dominant, dominant or pre-dominant/superdominant canopy within the stand may be considered habitat-disturbing to rest tree voles.

Activities that do not meet all three of these criteria, or that meet any of the Pechman exemptions would not trigger pre-disturbance surveys and could be implemented in accordance with the standards and guidelines for Riparian Reserves. Further examples of activities that would not trigger pre-disturbance surveys are described in the RTV survey protocol (Huff et al 2012).

Road Closures & Decommissioning: Existing road closures would be maintained. All temporary roads will be decommissioned after use.

Forest Plan Amendment: No site-specific, Forest Plan Amendments are proposed as part of this project.

Project Design Criteria: This decision includes all project design criteria and mitigations listed in Appendix B.

Changes to the Draft Environmental Assessment

The Klondike/Taylor Creek Fire of 2018

The Upper Briggs Project was nearing completion in summer of 2018. The public notice period for the draft EA closed on May 31, 2018. Response to comments received during the public notice period was completed in June 2018. On June 26th, 2018, the team was advised to move towards drafting the draft decision notice and finding of no significant impact.

On July 15th, 2018, the Taylor Creek Fire began in the Hellgate-Rogue River watershed and burned over 232,313 acres, along with the adjacent Klondike Fire. The Taylor Fire crossed into the Upper Briggs

watershed boundary and impacted 2,921 acres within the project area. A review was conducted by specialists post-fire to assess if the effects warranted a new analysis. Due to the severity and location of which the fire burned in the project area, the occurrence of the fire did not change the proposed action. An appendix was added to the EA with a more in-depth discussion of the effects of the Taylor fire by each resource area.

Field and satellite data allowed us to gather information about ongoing fire severity and potential impacts. We found the fires burned a total of 2,921 acres in the project area, directly affecting portions of only eight proposed vegetation treatment units. Of the eight units that had fire burn into them, fire effects were generally of very low intensity mostly burning ground fuels with occasional torching of individual trees. These areas were visited by the District Silviculturist and were judged to still be in need of treatment. It was also estimated that only 521 acres of the entire planning area had burned hot enough to create early seral conditions.

Stands (regardless of seral stage) that experienced greater than 75% basal area loss are considered as transitioned back into early seral habitat. In units that experienced 25-100% basal area loss, all commercial treatment will be dropped. Where appropriate, non-commercial treatment would still occur. It is expected that there will be a reduction of commercial thinning. The estimated acres with reduction in commercial thinning are listed in table below.

Primary Treatment Objective of Unit	Alternative 2 Acres	Reduced treatment as result of fire
DELSH	1053	58
Riparian Restoration	183	128
Roadside FMZ	713	
Pine Oak	706	
Rare Plants	42	
Meadow Restoration	188	
Ridgeline FMZ	1132	421
Total Acres	**4017**	**607**

Historically, wildfires have burned throughout time on the landscape within this watershed. Wildfires are a natural process and have contributed to maintaining a diverse, healthy ecosystem on the landscape, ensuring a mix of seral stages through time. In 2017, an estimated 521 acres of early seral habitat was created by these fires. More early seral might have been created had suppression efforts not been implemented to protect private and public infrastructure. Although the wildfires helped move the early seral percentage closer to the desired historical average of 9%, the overall goal has not yet been attained. Implementation of this project is still needed to more fully attain the purpose and need of increasing the amount of early seral habitat. Because of this, I have decided it is important to continue to move this project forward.

How the Purpose and Need is Met

The first objective of the Purpose and Need for this project is to strategically manage fuels to reduce the risk of large stand-replacing fires and reintroduce controlled fire use to the landscape. This is met by the proposed action thinning forested stands that would retain and enhance fire adapted trees (generally >120 years old), creating and maintaining strategically located shaded fuel breaks, reducing natural and post-harvest accumulations of fuel, decreasing fire behavior within treated stands, and reducing the likelihood of damage to adjacent stands (EA, pp. 16, 90). Retention objectives will be met. Design criteria and mitigations will reduce temporary impacts (EA, pp. 33-49).

The next objective is to maintain and restore structural and vegetation diversity as appropriate to abiotic and biotic site characteristics in upland areas. This will be done by thinning smaller trees competing with dominate large trees to reduce mortality of shade-intolerant species, creating or enhancing existing small openings in areas with homogenous habitat that lack desired species and structural diversity, controlling the spread of disease agents (dwarf mistletoe and root diseases), and increasing stand resiliency to western pine beetle and Ips pini through variable density thinning (EA, p. 15).

The third objective, to conserve and enhance habitat for the northern spotted owl and other wildlife species will be met by promoting development of high quality nesting, roosting, and foraging habitat from silvicultural treatments and increased fire resilience from strategic fuel treatments throughout the watershed (EA, p. 177). In the long term, implementation of this project would result in habitats that will be more diverse and suitable for spotted owls (EA p. 181).

Maintaining and restoring species composition and structural diversity of plant communities in riparian reserves and wetlands is the fourth objective of the purpose and need. The proposed action meets this objective by increasing the amount of large downed wood and snags in riparian reserves; use of variable density or radial thinning, group selection, prescribed fire; and targeted herbicide use to improve the diversity and composition of plant species within the riparian reserve (EA, p. 16).

The fifth objective is re-establish more natural subsurface flow patterns and improve overall watershed function. The project will place large wood and boulders into stream, improve stream crossings, storm-proof roads, and decommission roads (EA, pp. 16, 29-31). As a result, the watershed vegetation regime would become patchier, more varied, and more structurally diverse. Improved vegetation diversity would help stabilize streambanks and hillslopes. Instream habitat and riparian communities would become more complex and better developed, in turn supporting overall watershed function (EA, p. 14).

Public Involvement

The Upper Briggs project was first introduced to the public through the Forest Service's schedule of proposed action (SOPA) on January 1, 2015. Section 4.1 of the EA provides a summary of the scoping process and public comment period. Alternative 3 was developed based on key issues identified during public scoping, including greater retention of northern spotted owl habitat, large trees, and reduced harvesting in riparian reserves (EA, p. 16). Alternative 3 retains the same type of treatment as the Alternative 2 but across fewer acres and to a lesser degree (EA, pp. 16-21).

A 30-day scoping period was initiated on May 20, 2016 via the *Daily Courier* of Grants Pass, Oregon. Mailing of scoping letters were sent to 40 individuals and organizations that included directions to the Forest's website for more information and an open invitation for an informational field trip. Two letters were received during the scoping period. A field trip was held with the two commenters on July 28, 2016, additional individuals were invited but declined to participate.

The Upper Briggs EA was posted for public comment review; a legal notice to initiate public comment period was published May 2, 2018 in the *Daily Courier*. The review period ended June 4, 2018. Letters summarizing the proposed action were send to approximately 40 individuals and organizations that included directions to the Forest's website for more information. The EA lists agencies and people consulted and is provided in Chapter 4 of the EA. The proposed action and detailed maps were posted to the website. We received 16 letters during the public comment period. A comment analysis report was developed for the 16 letters received during the public comment period; this report is attached to the EA as Appendix A. Comments received during the public comment period were evaluated by the interdisciplinary team and consideration and responses were given to comments that met the criteria of specific written comments. They are available on the project website at https://www.fs.usda.gov/project/?project=45593.

Findings Required by Other Laws and Regulations

This decision is consistent with the National Forest Management Act and all other applicable laws and regulations, including but not limited to the below. See Appendix A of this Decision Notice for further details regarding the evaluation of the actions, to be undertaken by the Forest Service, in compliance with applicable environmental laws and executive orders.

Aquatic Conservation Strategy objectives of the Northwest Forest Plan: I find that none of the impacts associated with my decision (Alternative 2), at all scales, prevent attainment of the Aquatic Conservation Strategy; prevent compliance with Riparian Reserve Standards and Guidelines; or are inconsistent with the nine ACS Objectives. Riparian Reserve Standards and Guidelines (1994 NWFP ROD, pp. C-31 through C-39) and the nine ACS Objectives are described in detail in FEIS Chapter III, Section E, 1 (EA, pp. 137-141). My decision will have overall impacts that are similar to, but less than, FEIS Alternative 2.

All of the lands associated with my decision were evaluated in the Briggs Creek Watershed Analysis (1997). Those documents were used to develop and analyze our proposal.

The ACS was developed to improve and maintain the ecological health of watersheds and aquatic ecosystems on public lands. The four primary components of the ACS are designed to operate together to maintain and restore the productivity and resiliency of riparian and aquatic ecosystems; they include: 1) Riparian Reserves; 2) Key Watersheds; 3) Watershed Analysis; and 4) Watershed Restoration.

Clean Air Act: The proposed action will not violate air quality standards. Prescribed burning will be conducted in such a manner that it will conform to applicable provisions of the Federal Clean Air Act, Oregon Smoke Management Plan and the Rogue River National Forest Smoke Management Plan. (EA, p. 269)

Clean Water Act: The proposed action would conform to state water quality standards through application of the Best Management Practices, mitigation measures, and project design criteria (EA, p. 11).

Consultation and Coordination with Indian Tribal Governments, Executive Order 13175: Tribal consultation for the project was completed with the Confederated Tribes of the Grand Ronde and the Confederated Tribes of Siletz Indians. (EA, p. 268)

Cultural and Heritage resources (Antiquities Act; Archeological and Historical Preservation Act; National Historic Preservation Act): This proposed action will comply with federal cultural and heritage resource laws. The effects associated with the Upper Briggs project, when combined with the effects from past, present, and reasonably foreseeable future actions would not be expected to have a measurable adverse cumulative effect on cultural resources located within the project area, if standard mitigation measures are followed, as specified in the project design and the implementation guide. (EA, p. 269)

Endangered Species Act: The following determination has been made for botanical species: ***no effect to ESA-listed plant species (none present).*** (EA, p. 270)

The following determination has been made for aquatic and terrestrial wildlife species determined to be within the range of the proposed project area:

The proposed action would have No Effect to SONCC coho salmon, SONCC coho CH, Pacific eulachon, North American green sturgeon, and Essential Fish Habitat (EA, p. 147).

Northern Spotted Owl - may affect, likely to adversely affect (LAA) through downgrading and removal of 567 acres of NRF habitat, and removal of 87 acres of dispersal-only habitat. The effects are not expected to be persistent long-term negative impacts; as the treatments are designed as such that habitats

will be more diverse and sustainable in the long-term. Impacts are not anticipated to affect the overall demographic resiliency of the local population of spotted owls because the impacts represent a small proportion (0.3 percent) of an estimated population of owls that could occur within the Klamath East and Klamath West modeling regions. The Service does not anticipate that the estimated take is likely to resonate at the range-wide level. Therefore, the proposed action is not expected to jeopardize spotted owls at the range-wide scale. The action area is expected to continue to fulfill its role in the survival and recovery of the spotted owl at the provincial scale (BO, p. 61).

Gray Wolf – no effect, currently no wolves have been documented, nor suspected in the Upper Briggs Creek watershed. Nearest known occurrences are over 50 miles east in the Southern Cascades (EA, p. 159).

Human Environment - Environmental Justice and Civil Rights (Executive Order 12898): Implementation of this proposed action is not anticipated to cause disproportionate adverse human health or environmental effect to minority or low-income populations because the proposed activities are not expected to cause any affects to human health or result in adverse environmental consequences (EA, p. 269).

Invasive Species, Executive Order 13112: Mitigation measures are expected to minimize any expansion of invasive plants, which would otherwise result from the project. Given continued implementation of invasive plant control on the Wild Rivers Ranger District, resources would not be inordinately exposed to increased invasive species encroachment (EA, p. 270).

Floodplains and Wetlands, Executive Order 11988 and 11990: There are no actions that would disturb or effect wetlands or floodplain areas, therefore this proposed action is compliant with these executive orders (EA, p. 270).

Short-term uses and long-term productivity (Organic Act, Multiple Use Sustained Yield Act, National Forest Management Act): While analysis in the specialist reports document the potential for the impacts to soil resources, employing best management practices and mitigation measures will ensure that the resources will not be irreversibly damaged. This proposed action will remain compliant with these acts and Executive Orders (EA, p. 270).

Wild and Scenic Rivers Act: No wild and scenic rivers occur within the project area, therefore this proposed action will remain compliant with this act.

Wilderness and inventoried roadless areas (Wilderness Act, Roadless Area Conservation Rule): There are no wilderness within the project area. The Briggs Inventoried Roadless Area (IRA) is in the Upper Briggs Project planning area. There is no cutting, selling or removal of timber or road construction in the Briggs Inventoried Roadless Areas. Therefore collectively the proposed action is compliant with these acts (EA, p. 252).

Consultation with Government Agencies and Tribes

Tribal consultation for the project was completed with the Confederated Tribes of Siletz and the Confederated Tribes of the Grand Ronde (EA, p. 268).

A cultural resource inventory has been completed for the project area. The Wild Rivers District completed a cultural resource report and submitted it to the Oregon State Historic Preservation Officer (SHPO). The activities in the selected alternative have been designed to have no effect to cultural resource sites through both protection and avoidance (EA, p. 248).

There is no potential to affect SONCC coho salmon, CCH, and EFH that exist over 10 miles downstream and outside of the action area. There is an impassable barrier to the upstream migration of coho and

Chinook salmon in the lowest reach of Briggs Creek, therefore a determination of No Effect is rendered for these resources (EA, p. 147).

Formal consultation with the United States Fish and Wildlife Service (Service) concluded on June 29, 2017 with the issuing of a Biological Opinion (USFWS 2017, Tails# 01EOFW00-2017-F-0308) for the northern spotted owl and its critical habitat. The Service issued an incidental take statement for the Upper Briggs project.

On February 6, 2017 the USFWS issued a letter of concurrence for the grey wolf, completing informal consultation.

Legal Requirements and Policy

In reviewing the EA and actions associated with Alternative 2, I have concluded that my decision is consistent with the following laws and requirements:

The National Environmental Policy Act (NEPA)

NEPA establishes the format and content requirements of environmental analysis and documentation as well as requirements for public involvement and disclosure. The entire process of preparing this environmental impact statement was undertaken to comply with NEPA.

The National Forest Management Act (NFMA)

The Siskiyou LRMP was developed under the 1982 Planning Rule. We find this decision to be consistent with the long term management objectives as discussed in the Siskiyou National Forest Plan as amended. All other Forest Plan direction, including from the Northwest Forest Plan (1994) has been adhered to and incorporated into the project's design.

The Clean Air Act

The selected alternative will comply with the Clean Air Act. The Act prescribes air quality to be regulated by each individual state. The Forest Service will follow directions of the Oregon State Forester in conducting prescribed burning in order to achieve strict compliance with all aspects of the Clean Air Act and adherence to the Oregon Smoke Management Plan (EA pp. 95-96).

Implementation

Implementation is expected to begin in the fall of 2019. I reviewed the EA and associated appendices and believe there is adequate information within these documents to provide a reasoned choice of action. I am fully aware of adverse effects that cannot be avoided and believe the risks are outweighed by the benefits. Implementing the selected alternative will cause no unacceptable cumulative impact to any resource.

Minor changes may be needed during implementation to better meet on-site resource management and protection objectives. In determining whether and what kind of further NEPA action is required, we will consider the criteria at FSH 1909.15, sec. 18. Connected or interrelated proposed changes regarding particular areas or specific activities will be considered together in making this determination. The cumulative impacts of these changes will also be considered.

Minor adjustments to unit boundaries may be needed during final layout for resource protection, to improve logging system efficiency, and to better meet the intent of our decision. Many of these minor changes will not present sufficient potential impacts to require any specific documentation or action to comply with applicable laws.

Finding of No Significant Impact

Context

Disclosure of effects in the EA may differ by the resource being analyzed and by the scale of analysis. Multiple scales and levels of analysis were used to determine the significance of the effects on the human environment.

The Rogue River-Siskiyou National Forest is 1,800,000 acres. The Upper Briggs project area totals 4,017 acres. The proposed action includes thinning (variable density, radial thinning, and group selection) to improve the overall resiliency of the Upper Briggs Creek watershed to short-term natural disturbance and long-term climate change. The project activities comprise approximately 16% of the Upper Briggs watershed, and 0.2% of the Rogue River-Siskiyou National Forest. Within this context, I find that this project is local in scope.

Intensity

Environmental effects of the proposed action are documented in the EA pp. 21-75. The beneficial and adverse direct, indirect, and cumulative effects discussed in the EA have been disclosed in the appropriate context, and effects are expected to be low in intensity because of project design elements, resource protection measures, and management requirements in place to protect or reduce impacts to resources. Significant effects to the human environment are not expected. I base my finding on the following intensity factors used to assess the potential for environmental effects to be significant.

1. ***Impacts that may be both beneficial and adverse***. My finding of no significant environmental effects is not biased by the beneficial effects of the action.

2. ***Public health and safety*****.** Significant effects to public health and safety are not anticipated to result from implementation of Alternative 2 because implementation incorporates appropriate safety measures as required by OSHA smoke management will occur to ensure compliance with the Clean Air Act and these types of projects have not been shown to produce significant health or safety effects in the past (EA p. 95).

3. ***Unique characteristics of the area such as park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas***. There are no prime farmlands. Parklands, wetlands, surface water, and ecologically critical areas in the Upper Briggs project would not be detrimentally affected by the proposed actions (EA, p. 268-270).

4. ***The degree to which the effects are likely to be highly controversial*****.** The nature of potential effects of forest management activities proposed in this project is well established and not likely to be highly controversial in a scientific context. I have reviewed science submitted by the public and found nothing new to contradict the science utilized to develop the action alternative, and assess the impacts of the action alternative. While the public may perceive some aspect of the project to be controversial, there is no known scientific controversy over the impacts of the decision. I found the scientific literature that the Forest Service specialists relied upon to be the best available and most applicable science.

The Rogue River National Forest Plan permits thinning, fuels reduction, and prescribed fire in this area, and these activities have been conducted in this general area previously. The EA effectively addressed and analyzed all major issues associated with the project in Chapter 3. During 30-day public review of the proposed action (scoping) and public review of the EA and effects analysis, no scientific controversy over unacceptable effects was identified.

5. ***The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.*** The effects on the human environment from the action alternative are not uncertain and do not involve unique or unknown risks. All proposed actions are standard practices that have been previously implemented with known cause and effect relationships. The Rogue River-Siskiyou

NF has considerable experience with the types of activities that will be implemented. The best available scientific information provided the foundation for designing Alternative 2 of the Upper Briggs project. I am satisfied that the project, as designed, and the effects disclosed in the EA present no highly uncertain or unknown risks.

6. *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration*. The action will not establish a precedent for future actions with significant effects, because it conforms to all existing Forest Plan direction. Future undertakings are subject to NEPA procedures.

7. Cumulative effects. No significant cumulative effects have been identified. The interdisciplinary team analyzed and disclosed the direct, indirect, and cumulative effects of the actions on forest vegetation, fire and fuels, threatened and endangered wildlife and fish species, Sensitive wildlife species, management indicator species, recreation, botanical species, spread of invasive plants, transportation system, economics and jobs, air quality, cultural resources, climate change, and areas that could meet the criteria of potential wilderness. As described in the Upper Briggs EA, the direct, indirect, and cumulative effects of the selected alternative include the following:

Water Quality and Fisheries – There are no actions that would disturb or effect wetlands or floodplain areas (EA, p. 270). The proposed action would maintain water quality in the project area (EA, p. 138). The direct and indirect effects from the proposed action would result in a short term negative and long-term beneficial effect from Stream Enhancement activities. As a result, project activities May Impact Individuals or Habitat, But Will Not Likely Contribute to a Trend Toward Federal Listing or Cause a Loss of Viability to the Population or Species for KMP steelhead trout and Pacific lamprey due to the potential to injure individuals directly from Stream Enhancement activities, while providing a long-term benefit of improved instream habitat conditions (EA, p. 152). There is no potential to affect SONCC coho salmon, CCH, and EFH that exist over 10 miles downstream and outside of the action area. There is an impassable barrier to the upstream migration of coho and Chinook salmon in the lowest reach of Briggs Creek, therefore a determination of No Effect is rendered for these resources (EA, p. 147).

Threatened/Endangered, and Sensitive Wildlife Species –The following determination has been made for terrestrial wildlife species determined to be within the range of the proposed project area:

Northern Spotted Owl - may affect, likely to adversely affect (LAA) through downgrading and removal of 567 acres of NRF habitat, and removal of 87 acres of dispersal-only habitat. The effects are not expected to be persistent long-term negative impacts; as the treatments are designed as such that habitats will be more diverse and sustainable in the long-term. Impacts are not anticipated to affect the overall demographic resiliency of the local population of spotted owls because the impacts represent a small proportion (0.3 percent) of an estimated population of owls that could occur within the Klamath East and Klamath West modeling regions. The Service does not anticipate that the estimated take is likely to resonate at the range-wide level. Therefore, the proposed action is not expected to jeopardize spotted owls at the range-wide scale. The action area is expected to continue to fulfill its role in the survival and recovery of the spotted owl at the provincial scale (BO, p. 61).

Gray Wolf - no effect, currently no wolves have been documented, nor suspected in the Upper Briggs Creek watershed. Nearest known occurrences are over 50 miles east in the Southern Cascades (EA, p. 159).

Management Indicator Species (MIS) – The Wildlife Report assessed direct, indirect, and cumulative impacts to MIS with habitat in the project area (pp. 24-25). Habitats or individuals that may be impacted by project activities would not likely contribute to a trend towards federal listing and continued viability is expected for the populations and species (EA, pp. 153, 177). The analysis did not identify any significant cumulative effects to any MIS (EA, p. 153). The project is expected to increase availability of

large snags and down wood over time to the benefit of these species (EA, p. 203). Treatments will have a small increase in foraging habitat for deer and elk (EA, p.204).

Survey and Manage Species – High priority red tree vole sites were either excluded from the project or the stands are consistent with a category of projects exempt from survey and manage standards and guidelines as stipulated by Judge Pechman (October 11, 2006). Therefore, pre-disturbance surveys and application of known site-management recommendations are not required for areas that meet this criteria in this project (EA, pp. 169-170). Some areas in the project are subject to pre-disturbance surveys per the Final RTV Plan. For all other Survey and Manage terrestrial species (great grey owl and chase sideband), the project will have no impact on these species because no detections were observed during protocol surveys or the stands and proposed treatment met the Pechman exemption (p. 24 – Wildlife Specialist's Report for the EA) (EA, pp. 170-171).

Botanical Species – The following determination has been made for botanical species: ***no effect to ESA-listed plant species (none present)*** (EA p. 221). There would be no effect to sensitive vascular plants, vascular plants, bryophytes, and lichen species and habitat because there are none present. Sensitive fungi ***may impact individuals or habitat, but would not likely result in a loss of viability***, as it is difficult to determine if the fungi are present. No individuals or populations are known in the project footprint and none were located during project surveys. There would be no impact to Survey and Manage fungi, as known sites will be buffered (EA, p. 44).

Soils – Through application of the project design criteria and mitigation measures specifically developed for the Upper Briggs project, Alternative 2 will meet LRMP standards for soil productivity and comply with the recommended management guidelines (EA, p. 26).

Recreation – Recreation and vegetation management activities have co-existed in this area previously, as evidenced by the use of landings and past clearcuts as scenic vistas and the use of roads constructed for timber removal as trails. Short term effects from noise and traffic associated with all activities from the Upper Briggs Project would end once the project are completed (EA, p. 256). The only long-term impact to dispersed recreation activities is the loss of access to dispersed campsite locations with the road decommissioning (EA, p. 257). Cumulative effects on trails would be low because the number of trails affected is small compared to the number of trail opportunities available in the Briggs Creek Watershed area. In addition, harvest activities would likely occur in one general area at a time, leaving other nearby trails unaffected. No new projects are planned in the foreseeable future within the Briggs Creek Watershed area, so there would be no future activities that would have an effect on trails (EA, p. 258).

Cultural Resources – The Upper Briggs project is not anticipated to have a measurable adverse cumulative effect on cultural resources located within the project area, if standard mitigation measures are followed, as specified in the project design and the implementation guide (EA, pp. 247-248).

8. ***Degree action may affect sites listed in or eligible for listing in the National Register of Historic Places or may cause loss of destruction of significant scientific, cultural, or historical resources*****.** Eligible historic and cultural resources will be flagged and avoided during ground disturbing activities (EA, p. 148). The Upper Briggs Integrated Project is expected to have a **No Effect** to historic properties as defined under 36 CFR 800 if the protection and mitigation measures are implemented. Monitoring of historic properties during and after project implementation will be completed. Following these measures, the undertaking meets a finding of "Historic Properties Avoided" Stipulation III B. (II) of the Oregon Programmatic Agreement between the Pacific Northwest Region, the Advisory Council on Historic Preservation (ACHP) and the Oregon State Historic Preservation Officer (SHPO) (EA, pp. 248-249).

9. ***Degree action may adversely affected endangered or threatened species or its habitat that has been determined to be critical under the ESA*****.**

Implementation of the proposed action is likely to adversely affect spotted owl critical habitat due to activities that will result in the downgrade 509 acres and remove 16 acres of NRF habitat in the KLW-2

critical habitat subunit. However, the Service determined that the project's restoration treatments follow recommendations described in the final critical habitat rule for the following reasons: 1) activities that downgrade NRF habitat within known spotted owl home ranges will maintain pre-harvest function post-harvest or are located in areas of low relative probability of use; and 2) the proposed treatments are designed to improve overall ecological conditions in the action area. As a result, the impacts are not anticipated to resonate at the subunit, unit, or range-wide level. The project is anticipated to promote and conserve biodiversity, and restore more natural vegetation and disturbance regimes and heterogeneity conducive to the long-term conservation of the spotted owl (BO, p. 62). In a February 8, 2019 letter of concurrence, the Service concurred that the effects of the proposed action, along with the impacts of the wildfires and suppression activities will not exceed effects anticipated in the 2017 Opinion.

10. ***This action does not threatened a violation of Federal, State, or local law or requirements imposed for the protection of the environment.*** All applicable laws and regulations were considered in the planning of this project such as Clean Air Act, Clean Water Act, NFMA, and ESA.

Predecisional Administrative Review Process

This project is subject to pre-decisional administrative review pursuant to 36 CFR 218, Subpart B. Also called the "objection process" the predecisional administrative review process replaced the appeal process in March of 2013. The primary difference with the objection process is that a person may object to a project prior to the final decision, whereas under the appeal procedures, appeals were made after the decision.

Only individuals or organizations that submitted specific written or oral comments during a designated opportunity for public participation (scoping or the 30 day public comment period) may object (36 CFR 218.5). Notices of objection must meet the requirements of 36 CFR 218.8. Objections can be submitted in writing, either electronically or in hard copy but must be filed with the Reviewing Officer within 45 days from the date of publication of notice of the opportunity to object in *The Daily Courier*, Grants Pass, OR. The publication date is the exclusive means for calculating the time to file an objection. Those wishing to file an objection to this decision should not rely upon dates or timeframe information provided by any other source. Objections must be received before the close of the fifth business day after the objection filing period.

Incorporation of documents by reference is not allowed, except for the following list of items that may be referenced by including date, page, and section of the cited document, along with a description of its content and applicability to the objection: 1) all or any part of a federal law or regulation; 2) Forest Service directives and land management plans; 3) documents referenced by the Forest Service in the subject EIS; or 4) comments previously provided to the Forest Service by the objector during public involvement opportunities for the proposed project where written comments were requested by the responsible official. All other documents must be included with the objection.

Issues raised in objections must be based on previously submitted specific written comments regarding the proposed project or activity and attributed to the objector, unless the issue is based on new information that arose after the opportunities for comment. The burden is on the objector to demonstrate compliance with this requirement for objection issues.

Minimum requirements of an objection area described at 218.8(d). An objection must include a description of those aspects of the proposed project addressed by the objection, including specific issues related to the proposed project; if applicable, how the objector believes the

environmental analysis or draft decision specifically violates law, regulation, or policy; suggested remedies that would resolve the objection; supporting reasons for the reviewing officer to consider; and a statement that demonstrates the connection between prior specific written comments on the particular proposed project or activity and the content of the objection, unless the objection concerns an issue that arose after the designated opportunities for comment.

Objections may be:

- Objections may be mailed to: Forest Supervisor, Rogue River-Siskiyou, Attn. 1570 Appeals and Objection, 3040 Biddle Rd, Medford, OR 97504.
- Emailed to: objections-pnw-rogueriver-siskiyou@fs.fed.us. Please put OBJECTION and the project name in the subject line. Electronic objections must be submitted as part of an actual e-mail message, or as an attachment in Microsoft Word (.doc), rich text format (.rtf), or portable document format (.pdf) only. E-mails submitted to addresses other than the ones listed above or in formats other than those listed above or containing viruses will be rejected. It is the responsibility of the objector to confirm receipt of objections submitted by electronic mail. For electronically mailed objections, the sender should normally receive an automated electronic acknowledgement from the agency as confirmation of receipt. If the sender does not receive an automated acknowledgement of receipt, it is the sender's responsibility to ensure timely receipt by other means;
- Hand deliveries: Forest Supervisor, 3040 Biddle Rd, Medford, OR, 97504. Hand deliveries can occur between 8:00 AM and 4:30 PM, Monday through Friday except legal holidays.
- Faxed to: Objection Reviewing Officer, Attn: 1570 Objections at (541)-618-2400.

Contact Persons / Further Information

Project records are on file at the Wild Rivers Ranger District office. The EA and other project documents are available on the internet at: https://www.fs.usda.gov/project/?project=45593

For additional information concerning the specific activities authorized with this decision, you may contact:

Anne Trapanese, Environmental Coordinator
(541) 560-3433

Responsible Official

The District Ranger for the Wild Rivers Ranger District of the Rogue River-Siskiyou National Forest is the official responsible for deciding the type and extent of management activities in the Upper Briggs project area.

signature reserved for final Decision Notice _____

District Ranger

Appendix A: Consistency Review

Agency consultation and coordination to comply with related environmental laws and regulations has been accomplished through a variety of formal and informal methods. When considering the overall environmental impacts of the no action and action alternatives, it is important to remember that the actions undertaken by the Forest Service must be evaluated and in compliance with, to the greatest extent possible, applicable environmental laws and executive orders. **Table A** provides an abbreviated review of relevant laws and regulations evaluated and the findings determination. Chapter 5 of the EA also included the table below. For a more in-depth description of all the laws and regulations reviewed, please refer to the specialist reports.

Table A-1. Consideration of Applicable Laws and Findings Determination.

Consideration	Findings
Aquatic Conservation Strategy objectives of the Northwest Forest Plan	The hydrology and fisheries specialist reports address compliance with the Aquatic Conservation Strategy objectives. All alternatives are consistent with the ACS objectives.
Clean Air Act - 42 USC 7401 et seq. (1970)	The air quality section addresses air quality concerns. The proposed action would not violate air quality standards.
Clean Water Act - 33 USC 1251 et seq. (1972)	The hydrology and fisheries section addresses water quality concerns. The proposed action would conform to state water quality standards.
Consultation and Coordination with Indian Tribal Governments - Executive Order 13175	Government-to-government contact was initiated with the tribes listed. Letters (dated May 20, 2016) presenting the proposed action and a map of the planning area were sent to the Tribal Chairs/Council leaders, and if available, the cultural resource managers and natural resource managers for the six tribes. No replies were received.
Cultural and Heritage resources • Antiquities Act of 1906, 16 U.S.C. 431, 432, 433. • Archeological and Historical Preservation Act of 1960, 16 U.S.C. 469-469c. • National Historic Preservation Act of 1966, 16 U.S.C. 470 et seq. (NHPA)	All of the alternatives would comply with federal laws. The Siskiyou National Forest Plan tiers to these laws, therefore the proposed action would meet Forest Plan Standards. With the completion of the Heritage inventory under the terms of the 2004 Programmatic Agreement with Oregon State Historic Preservation Office, and by providing the interdisciplinary team with appropriate input as per NEPA, all relevant laws and regulations have been met.
Human Environment - Environmental Justice and Civil Rights (Executive Order 12898)	Evaluation of the human environment is incorporated in its entirety within this section; there is no stand-alone specialist report. A demographics review of the project area shows that there are no identified groups of people within or immediately adjacent to the project area that would be disproportionately affected by the no action or action alternatives. It is assumed that these population of people as well as the general population would continue to use or enjoy Federal forest lands for diverse purposes.

Consideration	Findings
Invasive Species - Executive Order 13112	While analysis in the specialist reports document the potential for the introduction and spread of invasive species, employing best management practices and mitigation measures would ensure that the resources would not be inordinately exposed to increased invasive species encroachment.
Floodplains and Wetlands - Executive Order 11988 and 11990	The hydrology section addresses these concerns. There are no actions that would disturb or effect wetlands or floodplain areas.
Short-term uses and long-term productivity • Organic Act of 1897 • Multiple Use Sustained Yield Act of 1960 • National Forest Management Act of 1976	The geology section addresses these concerns. While analysis in the specialist reports document the potential for the degradation of soil resources, employing best management practices and mitigation measures would ensure that the resources would not be irreversibly damaged.
Threatened, Endangered and Sensitive Species - Endangered Species Act of 1973	Threatened, endangered and agency sensitive species (wildlife, aquatic and botanical species) are addressed in the specialist reports and wildlife, fisheries and botanical resources section of this EA.
Aquatic:	Both Alternative 2 and 3 would have **No Effect** to **SONCC coho salmon**, **SONCC coho CH**, **Pacific eulachon**, **North American green sturgeon**, and Essential Fish Habitat. **SONCC Chinook salmon** are not known to occur or have suitable habitat within proximity to any of the proposed activities. The following determination has been made for Region 6 Sensitive aquatic species: Both the Alternatives 2 and 3 would result in a short term negative and long-term beneficial effect from Stream Enhancement activities. As a result, project activities **May Impact Individuals or Habitat, But Will Not Likely Contribute to a Trend Toward Federal Listing or Cause a Loss of Viability to the Population or Species** for **KMP steelhead trout** and **Pacific lamprey** due to the potential to injure individuals directly from Stream Enhancement activities, while providing a long-term benefit of improved instream habitat conditions. These Alternatives would have **No Impact** to **California floater**, **Western ridged mussel**, **highcap lanx**, **scale lanx**, **rotund lanx**, **robust walker**, **Pacific walker**, **Haddock's Rhyacophilan caddisfly**, and **SONCC Chinook salmon** because these species are not known to occur or have suitable habitat within proximity to any of the proposed activities.
Botanical:	The following determination has been made for botanical species: There would be **no effect** to ***Fritillaria gentneri*** (Gentner's fritillaria), ***Arabis macdonaldiana*** (Maccdonald's rock cress), or ***Lomatium cookii*** (Cook's lomatium), or any other plant species listed as threatened, endangered, proposed for listing, or candidates under the Endangered Species Act of 1973, as amended (ESA), administered by the U.S. Fish and Wildlife Service (USFWS) from the proposed Briggs Valley Project. This determination is based on the absence of suitable habitat within the project area and the absence of individuals known or expected to occur within the project area.
Wildlife:	The following determination has been made for terrestrial species determined to be within the range of the proposed project area: **Northern spotted owls** would have short-term impacts with long-term benefits by proposed activities, primarily from habitat modification and disturbance. Because activities are

Consideration	Findings
	likely to adversely affect spotted owls and designated critical habitat, formal consultation with the Service was completed in 2017. A Biological Opinion was transmitted to the RRSNF on June 29, 2017 (USFWS 2017, Tails# 01EOFW00-2017-F-0308). In a February 8, 2019 letter of concurrence, the Service concurred that the effects of the proposed action, along with the impacts of the wildfires and suppression activities will not exceed effects anticipated in the 2017 Opinion. All mandatory conservation measures (project design criteria) and terms and conditions from the biological opinion would be implemented. The ESA determination for the federally listed northern spotted owl (NSO) and designated critical habitat is ***may affect, and likely to be adversely affected*** **(LAA)** by project activities. NSO suitable nesting, roosting, foraging habitat would be treated and downgraded on ridgelines where relative habitat suitability is low for spotted owls. A small amount of dispersal habitat would be removed for meadow restoration. These activities would also occur within designated critical habitat for NSO. Anticipated project effects for all other Region 6 sensitive wildlife species listed in **Error! Reference source not found.** EA may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause loss of viability to population or species (MIIH). Furthermore, continued viability is expected for Siskiyou National Forest management indicator species (MIS) with habitat affected by the project. Please review section 3.2.2 for a list of terrestrial species determined not to be present within the range of the proposed project area.
Wild and Scenic Rivers - 16 USC 1271	There are no congressionally designated Wild and Scenic Rivers in the Upper Briggs Project planning area.
Wilderness and inventoried roadless areas • Wilderness Act of 1964 • Roadless Area Conservation Rule of 2001	Evaluation of the Wilderness Act and Roadless Area Conservation Rule is incorporated in its entirety within this section; there is no stand-alone specialist report. Based on a review of the project area (conducted using standards put forth in FSH 1909.12 Section 71.1[2] and using GIS to perform the analysis), there are no wilderness, potential wilderness, or inventoried roadless areas within the project area.

Appendix B: Project Design Criteria and Mitigations

Project design criteria and required mitigation measures to address specific objectives and reduce or eliminate environmental impacts for the proposed action are identified by resource area. Those listed here are specifically applicable to this project area and were also included in Section 2.7 of the EA. Additional required standard operating procedures and best management practices, which are generally applicable to all projects where harvest and/or burning occur, are found in Appendix B of the EA. These practices minimize adverse effects (or implement positive effects) and are also identified by resource area. Required practices are numbered consecutively across resource areas for ease of identification and reference.

Table B-1. Project Design Criteria & Mitigation Measures.

Soils & Geology

The following best management practices/mitigation measures/project design criteria are required to ensure compliance with the regulatory framework for the soil resource and/or to reduce the risk of adverse impacts to the soil resource. A description is provided as to when, where and how the design feature should be applied and/or what conditions would trigger the need to apply the design feature.

The effectiveness and feasibility of the following mitigation measures are assessed based upon the following rating system, shown below. These ratings are applied to all mitigation measures. Each measure identifies the code for effectiveness and feasibility at the end of the statement or paragraph. Ratings were determined by professional resource specialists, based on current scientific research and/or professional experience or judgment.

EFFECTIVENESS (E)

E1	Unknown or experimental; logic or practice estimated to be less than 75% effective; little or no experience in applying this measure.
E2	Practice is moderately effective (75 to 90%). Often done in this situation; usually reduces impacts; logic indicates practice is highly effective but there is minimal literature or research.
E3	Practice is highly effective (greater than 90%). Almost always reduces impacts, almost always done in this situation; literature and research can be applied.

FEASIBILITY (F)

F1	Unknown or experimental; little or no experience in applying this measure; less than 75% certainty for implementation. May be technically difficult or very costly. May be legally or socially difficult.
F2	Technically probable; greater than 75% certainty for implementation as planned; costs moderate to high in comparison to other options. Legally or socially acceptable with reservations.
F3	Almost certain to be implemented as planned; technically easy; costs low in comparison to other options. Legally or socially expected.

The following discussion by specific resource areas, provide additional mitigation and further explanation of the methodology, effectiveness, and feasibility of the mitigation measures.

a. Geology

- The Northwest Forest Plan Aquatic Conservation Strategy includes unstable and potentially unstable areas within Riparian Reserves. No commercial activities will occur within unstable and potentially unstable terrain. A Geologist, Soil Scientist, or Hydrologist will assist in field validation and identification of additional unstable areas during layout of stand treatments (BMP T-6). **E3/F3**
- The FS Sale Administrator will consult with a geologist or soil scientist on any planned new temporary road or landing construction locations before they are approved by the FS. New construction traversing across drainage headwalls and slopes delineated as High or Very High Risk on the slope stability and erosion risk map shall generally be avoided. **E3/F3**

b. Soils

Mitigation Measures designed for the protection of soils, site productivity, and water quality are generally referred to as Best Management Practices (BMPs) as described in *General Water Quality Best Management Practices,* Pacific Northwest Region, November 1988 (USFS 1988), in concert with the National Core BMP Technical Guide (USFS 2012). While the terminology in the 1988 BMPs is dated (for example Streamside Management Unit now falls under Riparian Reserve), they are still considered effective under today's management direction. Per the National Core BMP Technical Guide, this analysis includes site specific BMPs that have been developed for the Upper Briggs project using national, regional, and forest guidance as well as local knowledge of the project area.

- Prelocate skid roads in all ground based treatment units; up to 150 feet endlining required to designated skid roads. Skid road locations are to be approved by the Forest Service (BMP T-11). Ground-identified pre-designated skid trail patterns are to be authorized that will limit the area used for harvest access skid trails when employing ground-based harvest systems to ensure compliance with Standards and Guidelines to protect the soil resource and long-term site productivity. **E3/F3**
- During operations, heavy machinery use within a treatment unit shall be planned and approved by the Contract Administrator to be consistent with Forest Plan Standard and Guidelines for Soils. The maximum percent of area for detrimental soil conditions under the LRMP is 15% for an activity area (SNF LRMP S&G 7-2). This standard includes roads and landings. **E3/F2**
- The use of vehicles and equipment shall be limited to dry soil conditions to minimize compaction. Operating vehicles and harvest equipment on moist soils will cause compaction to be more severe and at greater depths in the soil. Percent moisture levels are to be determined by a Soil Scientist or trained Sale Administrator, using standard soils methodology (such as "Feel Method"), during project layout and implementation. Operations would be suspended when any soil caking, smearing, and/or rutting of approximately 4 to 6 inches begins to occur. **E3/F2**
- During implementation, management activities will be designed to retain effective ground cover to protect the soil resource, as specified in the SNF LRMP (1989), and to leave coarse woody material in accordance with the silvicultural prescription. **E3/F2**
- Conventional ground-based systems are restricted to slopes of 35% or less. Designated skid trails and skyline corridors are to be spaced at a distance approved by the Forest Service to keep detrimental soil conditions to within the maximum percent of area for detrimental soil conditions under the LRMP; 15% for an activity area (SNF LRMP S&G 7-2). (BMP T-5, T-9, T-11, T-13, VM-1, VM-4). **E3/F2**
- All skyline logging will be done with equipment capable of suspending one end of the log; up to 150 foot lateral yarding required to skyline corridors (BMP T-12). Whenever feasible, parallel yarding corridors are preferred over 'fan' settings in order to minimize soil/vegetation disturbance immediately below the yarder. Yarding corridors shall target a spacing of no closer than 150 feet as much as possible (BMP T-12). An effective slash cover and/or water bars in skyline corridors and skid trails will be installed following the completion of operations for erosion control (BMP T-16). **E3/F3**
- During implementation, complete maintenance and erosion control on landings/roads/trails prior to the onset of extended periods of wet weather (BMP T-13, R-18). Restrict haul on roads during extended periods of wet weather. (BMP R-20). **E3/F3**
- During implementation, ground-based heavy equipment used for cutting/ skidding/forwarding will be restricted to Forest Service-designated or approved skid trails that are obligated for this use, or to locations where thick slash mats are created using mechanized limbing/topping systems, or to periods when the ground is snow-covered and/or frozen to a depth that minimizes soil compaction. **E3/F3**
- During implementation, pre-existing (legacy) skid trails, temporary roads and landings shall be re-used to the extent practicable, so as to minimize additional ground impacts (detrimental soil conditions). Potential

re-use of pre-existing templates that are within riparian reserves shall be reviewed by a FS hydrologist and/or soil scientist and would only be approved if long-term benefits of post-treatment restoration of the template outweighs short-term impacts of re-use during project implementation. (BMP T-11). **E3/F2**

- No new temporary roads or landings shall be permitted within riparian reserves, to avoid the creation of detrimental soil disturbance and the potential for sediment to reach live water and to maintain ACS objectives for management of riparian reserves. **E3/F3**
- One or more of the following soil restoration methods shall be used (alone or in combination) to rehabilitate soil conditions on detrimentally disturbed ground (for example, on legacy or newly-designated skid trails, landings and temporary roads) where compaction tests or other monitoring identifies a need for a remedial or impact containment action. (BMP T-14, T-15, T-16, R-23) **E3/F2**:
    - After completion of logging, deep subsoiling of heavily compacted skid trails, landings and temporary roads may be employed, where soil conditions are feasible. This operation would use a specially-designed subsoiler implement, mounted on a -tracked excavator, to fracture and loosen compacted soil layers to re-establish water infiltration and deep root penetration. Mechanized equipment used for subsoiling would be restricted to the ground areas already disturbed to avoid creating additional ground impacts.
    - After completion of logging, scarification (ripping) of skid trails and other disturbed soil areas may be employed. This operation would use standard rock rippers or similar equipment, to superficially cultivate the surface of tractor skid trails as a way to promote natural herbaceous re-vegetation by providing seed catchments and shallow water infiltration.
    - During subsoiling or scarification, 5 to 10 tons per acre of woody material and/or slash may be placed on top of disturbed ground areas, either manually or with a machine. Dispersing organic material evenly across tractor skid trails, landings, and other bare soil areas reduces erosion and increases water infiltration.
    - Following completion of logging operations, and in situations where rapid (within months) protection of bared soils is necessary, mulching, grass seeding, shrub planting or tree planting may be conducted using native, non-invasive (and weed-free) grass seed or local native plants (as recommended by a botanist). Optionally, or in combination, sediment capture devices, such as rice straw wattles or bales, may be used to control erosion and reduce sediment movement.
    - Selection and use of these actions would be based on the existing condition of the site following completion of logging operations. These actions do not result in instant restoration; rather they begin the process of restoration. **E3/F2**
- All re-constructed or newly-constructed temporary roads would be reclaimed as soon as practical by the contractor before the storm season, unless mitigated with prescriptions provided on a case-by-case basis from a soils/geology/hydrology specialist. **E3/F2**
- Reclamation of temporary roads may include one or more of the following actions: removal of temporarily installed culverts, excavating cross ditches (water bars) to drain water captured by the former running surface, placing large logs or rocks onto the running surface to deter vehicle use, or re-contouring the road template to near-natural ground conditions, as well as any of the soil restoration methods discussed above. (BMP R-23). **E3/F2**
- Plan pile burning and prescribed fire operations for when litter, duff, and soil moistures are high enough to minimize consumption of soil organic matter and minimize soil heating. Minimize the size of individual slash hand piles scattered in the units to less than 10 ft. by 10 ft. Distribute piles to reduce severe burn impacts from concentrated fuel. (BMP F-2, F-3). **E3/F2**
- During prescribed fire operations, minimize erosion off of constructed firelines by implementin erosion control measures before extended periods of wet weather, and rehabilitating the fire line after the completion of operations. (BMP F-3). **E3/F2**

Additional PDC's/Mitigation Measures for Ground-based mechanized felling, pre-bunching, and/or forwarding on Steep Slopes

- Use of mechanical cutting/pre-bunching machines will be limited to 35% slopes or less, and shall be approved on a unit-by-unit basis on slopes up to 45% prior to the start of operation, depending on local soil properties, potential for effective slash matting, and proposed equipment. The objective is to limit soil compaction and displacement, to protect the topsoil for vegetative growth, and provide water infiltration. Mechanical cutting/pre-bunching machines shall:
    a) Not exceed limits on slope steepness, measured by percent slope (not grade of trail/road). Slope

maximum limit is 45 percent, when approved on a unit-by-unit basis, including short steep pitches. **E2/F2**

b) Reduce or eliminate turning and traveling across the slope to minimize soil gouging. **E3/F2**

c) Operate on a slash mat of ground cover or limbs and tops as thick and continuous as practical to minimize soil displacement and compaction. A minimum of 24-inch slash depth is typically necessary to achieve objectives. **E2/F2**

d) Maximize use of single pass trails within the unit; avoid use of multiple pass trails (greater than 2 passes) as much as practicable. Trail spacing for mechanical cutting/pre-bunching will be designed in a manner such that soil disturbance is less than 15% of the activity area. **E3/F2**

- The pre-sale layout or marking crew will clearly delineate on the ground, and GPS areas for inclusion on Sale Area Maps prior to operations as much as practicable, where treatment is planned for slopes greater than 35% to avoid excessive soil disturbance from heavy equipment machinery. **E3/F2**
- Skid trail percent slope cannot exceed that which the equipment needed to complete erosion control measures (such as construct waterbars, distribute slash cover) can safely travel without causing more negative resource impacts, otherwise erosion control measures must be installed by hand. **E3/F2**
- Soil Resource PDC's/Mitigation Measures can be site-specifically adjusted by the soil scientist, in collaboration with other resource specialists, during project implementation if monitoring of soil effects provide data to inform effective adaptive management that continues to meet the objectives of soil resource management, as well as all other resources, in the Upper Briggs analysis. **E3/F3**

Road decommissioning, storage (convert to ML1), and stream crossing improvement

- During decommissioning and storage activities, unstable road fill slopes will be pulled back adequately to prevent future failure. **E3/F3**
- Decommissioned roadbeds and project staging areas are to be left in a condition that prevents channeling of surface flows and allows infiltration suitable for revegetation. **E3/F3**
- Stockpile any slash generated from vegetation clearing during road decommissioning, storage, and stream crossing improvement activities to scatter over disturbed sites. Seed exposed soils with an appropriate native seed mix, particularly areas with minimal residual slash cover. **E3/F2**
- Before the onset of extended wet weather, install appropriate temporary erosion control measures at incomplete project sites with exposed soil, such as silt fencing or mulch. **E3/F3**

Fire, Fuels & Air Quality

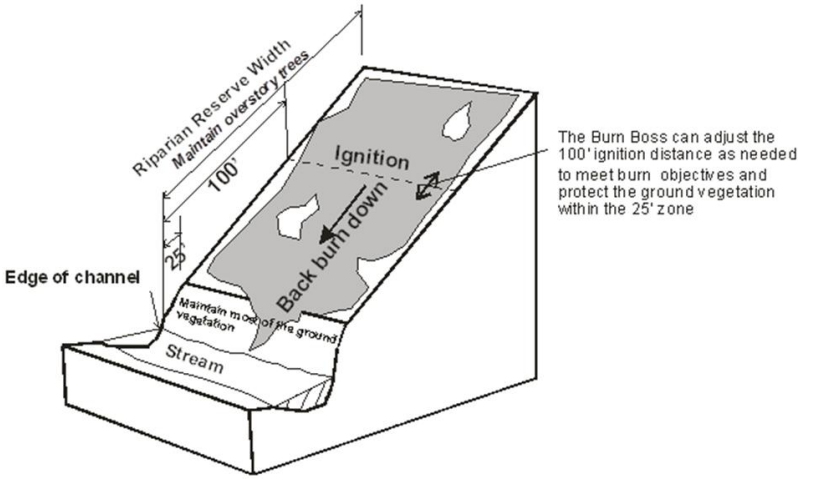
Design & Mitigation Measures

Burning will not take place during visibility protection period of July 1 to September 15 or during weather conditions when smoke could travel to areas containing air quality restrictions.

Design & Mitigation Measures

Riparian Reserves:

- Use mechanical treatment and pile burning as needed prior to under burning to protect the overstory trees.
- Pile and burning should be closer to the stream than 25 to maintain ground vegetation.
- Pump chances: Fire, engineering and aquatic resource personnel will work together to determine suitable pump chances and measures needed for the protection of aquatic resources.



no ft.

the

- Refuel 100 ft. from a stream, or use measures to assure fuel does not reach flowing water.
- Water withdrawal Equipment must have a 3/32 intake screen in order to avoid fish entrapment.

Hydrology

Design & Mitigation Measures	Objective
Riparian Reserves: Fish-bearing and permanently flowing non-fish-bearing streams	
1. Apply direction in the Northwest Forest Plan Temperature TMDL Implementation Strategies. The table below establishes the distance (feet) from the active stream channel where no removal (thinning) of the overstory canopy will occur to protect shade on perennial streams.	Maintain existing stream shade (primary shade zone).

Minimum Width of Primary Shade Zone (feet) based on Hill Slope and Tree Height:

	HILL SLOPE		
TREE HEIGHT	<30%	30% – 60%	>60%
<20 feet	12	14	15
20 – 60 feet	28	33	55
>60 – 100 feet	50	55	60
>100 – 140 feet	70	75	85

The Temperature Implementation Strategies allows the distances above to be less if one of the following conditions applies:

- The trees are located on a south facing slope and therefore do not provide stream shade
- An appropriate level of analysis is completed and documented, such as shade modeling, using site specific characteristics to determine the primary shade tree width

Design & Mitigation Measures	Objective
• Field monitoring or measurements are completed to determine the width where optimum Angular Canopy Density (65% or greater) is achieved Within the primary shade zone: • Trees may be limbed; • Understory may be thinned and removed or hand piled and burned; • Overstory may be thinned on south facing aspects only.	
2. During **fuels treatment** back down fire and do not burn ground vegetation within 25 feet of a stream (any slope, low intensity burn). No removal of understory vegetation within 25 feet. No ignition points within 100 feet.	Maintain bank integrity to prevent erosion during high flows.
3. **Fuels treatment** - hand piles will not be burned closer than 25 feet from a stream	Maintain bank integrity to prevent erosion during high flows.
4. **Timber harvest** – No timber harvest as set by mitigation 1. From that distance to 100 feet of a stream use management practices that maintain 90% of pre-harvest infiltration rates. No harvest on unstable areas.	Prevent sediment delivery to stream and prevention of concentration of overland flow.
5. **Large wood recruitment** – wood contribution zone need to be considered on a site specific basis.	Maintain and improve fish habitat complexity by recruitment of large wood material.
Riparian Reserves: Intermittent Streams	
1. During **fuels treatment,** minimize burning ground vegetation within 25 feet of a stream (any slope, low intensity burn). Minimize removal of understory vegetation within 25 feet.	Maintain bank integrity to prevent erosion during high flows.
2. **Fuels treatment** – No hand piles will be located or burned in the channel. Minimize hand pile burning closer than 25 feet from a stream. No ignition points within 100 feet.	Maintain bank integrity to prevent erosion during high flows.
3. **Timber harvest** – No timber harvest within 25 feet of a stream. From 25 to 100 feet of a stream use management practices that maintain 90% of pre-harvest infiltration rates. No harvest on unstable areas.	Prevent sediment delivery to stream and prevention of concentration of overland flow.
4. **Large wood recruitment** – wood contribution zone need to be considered on a site specific basis.	Maintain and improve fish habitat complexity by recruitment of large wood material.

Aquatic Biota

Design & Mitigation Measures

Stream Enhancement

- Place large wood (LW) and boulders only in those areas where they would naturally occur and in patterns that closely mimic that which would naturally occur for that particular stream type.
- LW includes whole conifer and hardwood trees, logs, and root wads. LW size (diameter and length) should account for bankfull width and stream discharge rates. When available, trees with rootwads should be a minimum of 1.5 x bankfull channel width, while logs without root wads should be a minimum of two times the bankfull width. Place wood in a manner that most closely mimics natural accumulations of LW for that particular stream type. Structures may partially or completely span stream channels or be positioned along streambanks.
- No conifers should be felled in the riparian area for in-channel large wood placement unless conifers are fully stocked and are consistent with project design criteria in vegetation treatment categories. Felled hazard trees can be used for in-channel wood placement.
- LW may be buried into the streambank or channel but shall not constitute the dominant placement method of LW.
- Tree Removal for LW Projects:
    - Trees may be removed by cable, ground based equipment, or felled directly into the stream. Felled trees may be stock-piled for later instream enhancement projects.
    - Individual trees or small groups of trees (<5) should come from the periphery of permanent openings (roads, etc.) or from the periphery of non-permanent openings (e.g. plantations, along recent clear-cuts, etc.).
    - Trees selected for LW enhancement projects must be spaced at least one site potential tree height apart and at least one crown width from any trees with potential nesting structure for ESA-listed bird species.
- Instream work will occur during the Oregon Department of Fish and Wildlife (ODFW) instream work period.

Wildlife

Species	Design & Mitigation Measures	Objective	Applies to
NSO	**Treatment timing of any commercial thinning** for certain units are to be staggered over at least two years to minimize effects to prey base for particular known NSO sites, see project biological opinion terms and conditions (page 64) for more details.	Minimize adverse impacts to federally listed species (spotted owls).	Units: 8, 9, 12, 12A, 262, 504, 505, 3, 3S, 14, 15, 16, 23B, 23C, 31 31A, 31B, 63, 64, 69, 70, 80, 101
NSO	**Unit specific treatments for units 101 (entire) and 31B between Secret Creek and road 2500643 –** underburn only, minimize ignition, hand thinning may occur to reduce ladder fuels where needed to prevent crown fire. No construction of landings or temp roads in these areas.	Minimize adverse impacts to federally listed species (spotted owls).	Units 101 and 31B
NSO	**Nest patches (70 acres) –** commercial thinning or temporary road or landing construction will not occur within any NSO nest patches.	Minimize adverse impacts to federally listed species (spotted owls).	All treatment units.
NSO	**High Quality NRF (RA32) –** no treatment activities will occur in patches identified as high-quality NRF per recovery plan RA32 implementation guidance.	Maintain habitat for federally listed species (spotted owl dispersal habitat).	
NSO	**Gaps** - Created forest openings will be 3/4 acre or smaller. Gap acreage will not exceed 20% of the unit area inclusive of landings, roads, yarding corridors and other operational openings.	Maintain habitat for federally listed species (spotted owl dispersal habitat).	All treatment units.
NSO	**Noise above ambien**t (chain saws, felling, yarding, road construction, heavy equipment) within disturbance distances - Work activities (tree felling, yarding, road construction, etc.) that produce loud noises above ambient levels will not occur within restricted distances of any spotted owl nest site or unsurveyed NRF habitat between 1 March and 30 June (or until two weeks after the fledging period) – unless protocol surveys have determined the nest site or habitat not occupied, non-nesting, or failed in nesting attempt. Buffer distance for chain saws is 65 yards; for heavy equipment is 35 yards.	Minimize adverse impacts to federally listed species (spotted owls).	All project activities within disturbance distances of NRF habitat.
NSO	**Helicopter or blasting operations** - Follow the project design criteria in the relevant biological assessment.	Minimize adverse impacts to federally listed species (NSO).	Area of disturbance.
NSO	**Hauling** on roads not generally used by the public (usually ML 1 & 2) and within 65 yards of an owl nest site or unsurveyed NRF habitat– is restricted from 1 March through 30 June (or as determined by a wildlife biologist).	Minimize adverse impacts to federally listed species (spotted owls).	Haul on ML 1 & 2 roads (typically) and within 65 yards of an owl nest site.
NSO	**Danger trees** along roads - Limit number of trees to be felled within spotted owl habitat (NRF or dispersal) to no more than 10 trees per road mile. Limit number of trees to be felled within owl nest patch to no more than 5 trees per known nest site.	Maintain habitat for federally listed species (spotted owl)	Haul routes
NSO	**Burning** will not take place within 1/4 mile of a spotted owl site or unsurveyed NRF habitat between 1 March and 30 June (or until two weeks after the fledging period) unless substantial smoke will not drift into the NRF habitat or protocol surveys have determined the habitat is not occupied, or a known site is non-nesting, or failed in their nesting attempt.	Minimize adverse impacts to federally listed species (spotted owls).	All treatment areas.

Species	Design & Mitigation Measures	Objective	Applies to
NSO	If new NSO occupied sites are found during implementation, notify the district biologist and contract officer to implement work stoppage and further evaluation to ensure compliance with consultation (See project BA p 25).	Minimize adverse impacts to federally listed species (spotted owls).	All treatment areas.
Pacific fisher	A timing restriction on thinning, yarding and burning activities is recommended from March 1 through June 30, unless protocols are implemented to determine that fishers are not denning in any given unit.	Minimize adverse impacts to federally proposed species	All treatment areas.
RTV	**Red tree vole nest trees outside of high priority sites** - Do not cut known nest trees (see map, Allison 2018, appendix A, map 1) and retain canopy connectivity to adjacent trees.	Minimize adverse impacts to red tree voles.	Units 2,3,4,6,9,10,15,16,23b,48, 253,504,505,508 652
Early seral	**Seed** landings, decommissioned roads, meadows and other openings with appropriate native grasses, forbs and shrubs to benefit pollinators, ungulates and other early-seral species.	Provide for species dependent on grasses and flowering/fruit producing plants; such as, butterflies, bees, some birds and mammals, ungulates etc.	All treatment areas.
Misc.	Damaged, cull or defective trees - Do not fell or remove. Leave for wildlife tree and snag recruitment.	Provide for species reliant on decadent trees or snags; such as, owls, fisher, bats and woodpeckers.	All treatment areas.
Misc.	Existing dead wood; standing and down - Avoid and protect existing snags and down wood ≥10 inches dbh to the greatest extent possible. Use treatment skips to avoid large dead wood (>20 inches dbh) or areas of accumulated standing and down dead wood.	Preserve existing dead wood to provide for species reliant on it; such as, owls, fisher, bats, woodpeckers, etc.	All treatment areas, especially DELSH and pine oak restoration
Misc.	Create hard snags and large down wood - in units where snags or down wood are deficient (< 4 snags per acre) and where it is desireable to eliminate trees >10" dbh, (eg. girdle a Douglas fir to favor a black oak) Distribute as singles and clumps, across all treatment types. Leave snags cut as operational danger trees for down wood.	Provide hard, dead wood until the stand resumes producing dead wood through natural processes. Provide for species reliant on snags and large down wood; such as, owls, flying squirrels, fisher, bats, woodpeckers, cavity nesting birds, etc	All treatment areas, especially DELSH, pine oak and meadow restoration
Misc.	Underburning – avoid spring burning serpentine habitat with potential host plants (Viola halli) for coronis fritillary.	Minimize impacts to at-risk species	Serpentine within treatment areas
Misc.	Incidental sightings of sensitive species - Follow the design criteria and mitigation measures in relevant wildlife consultation documents, recovery documents, management plans or Forest Service policy.	Minimize adverse impacts to at-risk species.	All treatment areas.
Misc.	Legacy trees – greater than 120 years in age based on tree characteristics described in project marking guidelines would be retained in all treatment units.	Maintain legacy trees for heterogeneity, future large dead wood and benefit multiple species.	All treatment areas.

Species	Design & Mitigation Measures	Objective	Applies to
Misc.	Retention of large hardwoods – will be implemented per marking guidelines for all treatment units.	Maintain habitat diversity and benefit multiple species.	All treatment areas.
Misc.	Untreated buffers of active bird nests encountered during project activities would be large enough to avoid soliciting a stress response that causes and adult to flush from incubating eggs or nestlings, avoid feeding young or exhibit defensive behavior until young have fledged.	Minimize adverse impacts to breeding migratory birds and raptors.	All treatment areas.

Botanical Resources

Design & Mitigation Measure	Applies to
Sensitive Species	
RRS Botanists will flag all appropriate sensitive plant occurrences RRS Botanists will be adequately notified prior to implementation to ensure flagging is in place If any additional sensitive species occurrences are located prior to or during implementation they will be flagged, buffered, and avoided. The specific area of the buffer will be determined on a site specific basis. The goal of the buffer will be to prevent direct disturbance to the plants and to protect the local habitat by minimizing disturbance to the soils, hydrology, and mychorrhizal communities.	All units and all sensitive botanical species occurrences
Cypripedium fasciculatum All occurrences of *Cypripedium fasciculatum* will be buffered and flagged by up to a 100 foot radius. RRS botanists will flag the buffer. No project activities will occur within the buffered area. Project activities prohibited within the buffered/flagged areas include: • No ground disturbance • No temp roads • No road decommissioning • No landings • No machinery (including ground based tree removal systems) • No skid trails • No tree/brush/plant removal • No canopy disturbance • No skyline/cable logging over buffered areas • No fuel piling • No pile burning • No underburning or fire • Directional fell trees away from buffered areas	Units: 3, 21, 22, 23A, 24, 63, 508 and 509
Iliamna latibracteata The occurrence of *Iliamna latibracteata* will be buffered and flagged by a 30 foot radius from individuals. RRS botanists will flag the buffer. There are occurrences in Units 3, 14, and 50. Hand thinning of overstory and underburning within the buffered area desired. Material will be piled outside the buffered areas. Lop and scatter material is acceptable and may be underburned within the buffered area. Individuals will be flagged avoided.	Units: 3, 14, and 50

Design & Mitigation Measure	Applies to
The occurrence in Unit 50 is directly on the edge of the FS Road 2500. Pullouts and other vehicle and equipment activities will be prohibited within the buffered areas. Staging, decking, piling of timber are prohibited within the buffered areas. Project activities prohibited within the buffered/flagged areas include: • No ground disturbance such as ground based tree removal systems • No temp roads • No road decommissioning • No landings • No machinery (including ground based tree removal systems) • No skid trails • No skyline/cable logging over buffered areas • No slash piling • No fuel piling • No pile burning • Directional fell trees away from buffered areas	
Sophora leachiana Lop and scatter is permitted with underburning. Underburning is desirable. Western sophora needs open areas to thrive. Creating ½ to ¾ acre openings adjacent to plants (but not on existing plants) within the sophora area is desirable and recommended. **In Unit 2 and other units where there may be tractor logging within Sophora areas:** • Individuals will be buffered up to 30 feet in radius determined by RRS Botanists • This buffer will prohibit tractor logging and prohibited activities listed below • Trees will be directional felled away from buffered areas • Underburning is desirable **All Sophora Units - Project activities prohibited within the Sophora areas include:** • No temp roads • No road decommissioning • No landings • No machinery such as ground based tree removal systems • No skid trails • No slash piling • No fuel piling within 30 feet of individuals • No pile burning within 30 feet of individuals **Road decommissioning activities** • Flag, buffer, and avoid population on FS road 2500-100 past Windy Creek • Flag, buffer, and avoid population on FS road 2500-606	Units: 2, 3, 3S, 5, 9, 14, 15, 16, 35, 48, 240, 262, 503, 504, 505, 506, 510, and 652
Pyrola dentata All occurrences of *Pyrola dentata* will be buffered and flagged by a 30 foot radius. RRS botanists will flag the buffer. No project activities will occur within the buffered area. Project activities prohibited within the buffered/flagged areas include: • No ground disturbance	Unit 47

Design & Mitigation Measure	Applies to
• No temp roads • No road decommissioning • No landings • No machinery (including ground based tree removal systems) • No skid trails • No tree/brush/plant removal • No canopy disturbance • No skyline/cable logging over buffered areas • No fuel piling • No pile burning • No underburning or fire • Directional fell trees away from buffered areas	
Strategic and Survey & Manage Species	
If any target species are found during pre-implementation surveys, flagging will be placed to delineate a protective boundary, which will include up to a 100-ft "no activity" buffer. All known strategic and survey and manage species will be flagged to delineate a protective boundary, which will include up to a 100-ft "no activity" buffer. Rogue River-Siskiyou Botany Department will delineate and flag the protective species boundaries.	All Units
***Piperia candida* (white piperia)**	Units
Occurrences will be buffered and flagged up to a 50 foot radius. RRS botanists will flag the buffer. No project activities will occur within the buffered area. Project activities prohibited within the buffered/flagged areas include: • No ground disturbance • No temp roads • No landings • No machinery (including ground based tree removal systems) • No skid trails • No tree/brush/plant removal • No canopy disturbance • No skyline/cable logging over buffered areas • No slash piling • No fuel piling • No pile burning • No underburning or fire • Directional fell trees away from buffered areas	7, 22, 38, 13W
Strategic and Survey & Manage Fungi	Units
Elaphomyces reticulatus, Otidea leporina, Ramaria rubripermanens, Sparassis crispa, Spathularia flavida, Tylopilus porphyrosporus are strategic and survey and manage fungi species that is dependent on the mycorrhizal soils. Fire can impact the mycorrhizal soil profiles altering the viability of individuals and localized occurrences ultimately leading to mortality. Soil compaction negatively alters the below fungi mycelium as well as mycorrhizal soils. Threats to this species include timber harvest, road construction, decommissioning of roads, trail construction, creation of recreation sites, and fire. Threats also include actions that alter the hydrology, moisture, and temperature regimes, disturb the soil and litter layers. All Strategic and Survey and Manage fungi occurrences will be buffered and	8, 12, 14, 48, 57, 505, 510

Design & Mitigation Measure	Applies to
flagged up to a 100 foot radius. RRS botanists will flag the buffer. No project activities will occur within the buffered area.	
Invasive Plants	
RRSNF Botanists will be notified adequately (minimum of two weeks) prior to any project implementation of unit or road area to treat and/or properly flag infested areas in field season. If implementation is to occur outside of field season then schedule should be relayed to Botany Department in previous field season to adequately treat infestations.	All Invasive Plant Infestations, Units, and Project Area
All WRRD target invasive plants and noxious weed infestations within the project area or along travel routes near the project area will be hand treated where feasible or "flagged and avoided" according to the species present and project constraints. Roadside invasive plant sites would be flagged and/or staked by the RRSNF Botanist/Invasive Plant Coordinator. Infested sites will be avoided or the FS Contracting Officer's Representative or other FS Representative (representatives may include COR/ER/FSR/SA, etc.) would direct contractor to blade or ditch in a manner that reduces the potential spread from infested to un-infested sites (e.g. blading into instead of through from infestations). <u>Units with known invasive plant infestations</u> 2, 3, 4, 5, 9, 10, 12, 19, 20, 23A, 31B 39, 48, 50, 55, 63, 64, 69, 165, 262, 500, 501, 505, 510, 513, 517; FS Road 2500 Haul Route to North <u>Roads with known invasive plant infestations</u> FS Road 2500 Haul Route to North, 2500000, 2500100, 2500110, 2500121, 2500128, 2500138, 2500141, 2500603, 2500609, 2500617, 2500640, 2500643, 2509000, 2509021, 2509025, 2509032, 2509049, 2509630, 2509631, 2509632,2509633, 2510000 ,2512000, 2512013, 2512017, 2512040,2512635	All Units and Project Area
All off-road equipment used on this project shall be washed and cleaned before moving into the project area to ensure that the equipment is free of soil, seeds, vegetative material, or other debris that could contain or hold seeds of noxious weeds. "Off-road equipment" includes all logging and construction equipment (bull dozers, graders, etc.) and such brushing equipment as brush hogs, masticators, and chippers; it does not include log trucks, chip vans, service vehicles, water trucks, pickup trucks, and similar vehicles not intended for off-road use. However, it is recommended that all vehicles, especially large vehicles, are cleaned when they come onto the Forest Service lands or come from a known weed infested area. This is to reduce the potential for spreading invasive plants. The Forest Service will inspect all off-road equipment used on this project prior to entry onto NFS lands. • All parts of equipment must be clean including the undercarriage and chassis before transport to the project area or between project areas. • Equipment will be considered clean when visual inspection by FS Contracting Officer Representative (or other FS Representative) does not reveal soil, seeds, plant material, or other such debris. • When working in known weed infested areas equipment shall then be cleaned before moving to other Forest Service system lands that are un-infested or which do not contain the same invasive plant species.	All Units and Project Area

Design & Mitigation Measure	Applies to
In order to be in compliance with the 2005 R.O.D. for managing invasive plants, all earth-moving equipment, gravel, fill, or other materials are required to be weed-free. Use onsite sand, gravel, rock, or organic matter when possible. Otherwise, obtain weed-free materials from gravel pits and fill sources that have been surveyed and approved by a RRS Botanist/Invasive Plant Coordinator.	All Units and Project Area
Minimize the amount of ground and vegetation disturbance in the implementation areas. Reestablish vegetation where feasible on disturbed bare ground to minimize weed establishment and infestation. Re-vegetation is especially important in staging areas.	All Units and Project Area
Use weed-free mulches, and seed sources. All activities that require seeding or planting must utilize locally collected native seed sources when possible. Plant and seed material should be collected from or near the project area, from within the same watershed, and at a similar elevation when possible. This requirement is consistent with the Forest Service Manual 2000 (Chapter 2070-Vegetation Ecology) policy that directs the use of native plant material for re-vegetation and restoration for maintaining "the overall national goal of conserving the biodiversity, health, productivity, and sustainable use of forest, rangeland, and aquatic ecosystems." Seed mixes must be approved by a RRSNF Botanist.	All Units and Project Area
Soil moved from an infested site to be disposed of at designated site coordinated by engineers and the District Botanist/Invasive Plant Coordinator.	All Units and Project Area
Landings or staging areas for equipment, materials, or crews will not be sited in invasive plant or noxious weed infested areas.	All Units and Project Area
Disturbed areas will be re-vegetated to prevent the establishment or spread of invasive plants and noxious weeds. Areas may be re-vegetated dependent on the requirement and need of each individual site influenced by the activity that would occur at these sites (refer to Upper Briggs Restoration Project Re-Vegetation Plan for specifics).	All Units and Project Area
Areas with medusahead infestations will be avoided by equipment and operations. If prescribed fire is to be utilized in these areas it will be coordinated with RRS Botanist • FS road 2500121 • FS road 2512013 (Sam Brown Campground) • FS road 2512 (Sam Brown Horse camp parking lot) • Any new infestations discovered	All Units and Project Area
After the project phase is completed the WRRD Botanist must be notified so that the project area can be monitored for 3 years subsequent to project implementation to ensure additional invasive plant species do not become established in the areas affected by the project and to ensure that known weeds do not spread. Monitoring will result in early detection and treatment of invasive plant sites, thus reducing the cost of treatment and the long-term environmental impacts of invasion.	All Units and Project Area
Any new invasive plants found in the project area will be documented and the Wild Rivers District Botanist will be notified of the infestation location.	All Units and Project Area

Vegetation

Design & Mitigation Measures	Objective	Applies to
Project Scheduling: Schedule project activities during the dry season (June 1 – September 30**)** **Unit Scheduling:** Conduct work on roads where *P. lateralis* is not present before working on sites infested with *P. lateralis.* **Access:** Designate access and egress routes to minimize exposure to *P. lateralis.* **Washing Project Equipment**: a) Wash project equipment, work boots and hand tools before entering National Forest land for the first time in the work period. Wash equipment again before entering National Forest lands if work is halted and equipment is taken to another job site, or for any reason equipment is taken to another job site away from this project. b) Wash project equipment, work boots and any hand tools after working in each area where *P. lateralis* is already known to be present and before working on the next scheduled site. c) Wash stations will be established through coordination with the botanist and the contract inspector on the project. d) Wash stations will follow the design recommended in the Attachment 2: General Specifications for a Washing Station and Equipment Cleaning Checklist POC FSEIS ROD 2004. This design will consist of a 6" rock lift from the existing road surface and be at least 1.5 times the length of the longest truck used in operations. Water would be caught at the lowest point off of the road in a hole lined with bio mesh that would be disposed of by burning or bagged and disposed to a landfill to remove any invasive weed seeds. e) A wash station may also be a mobile wash station that can be moved from site to site for cleaning of the equipment. The mobile wash station mush use treated water following the below criteria for bleach concentration. Wash station filters would be bagged and disposed of in a landfill to prevent spread or establishment of invasive plant seeds or materials. **Utilizing Uninfested Water**: Use uninfested water sources for planned activities such as equipment washing, road watering, and other water-distribution needs, or treat water with Ultra Clorox®, at a rate of 1 gallon of bleach/1000 gallons of water. **Summer Rain Events:** Apply permit or contract clause or otherwise require cessation of operations when indicators such as puddles in the roadway, water running in roadside ditches, or increase in soils moisture (as by moisture meter or equivalent) indicate an unacceptable increase in the likelihood of spreading *P. lateralis.*	Minimize risk of introducing new *P. lateralis* infestations to uninfested Port Orford cedars	ALL uninfected Port Orford cedar populations
Resistant POC Planting: Site specific based on uninfected areas where the proposed action treatment for a road either storage or decommission. (See Upper Briggs Restoration Project Revegetation Plan)	Introduce resistant POC into uninfested locations where vegetation removal occurs in the project area.	ALL roads that receive Storage or Decommissioning Treatments

Design & Mitigation Measures	Objective	Applies to
Routing Recreation use: Route new trails (off-highway vehicle, motorcycle, mountain bike, horse, and foot) away from areas with POC or PL, or provide other mitigation such as seasonal closures. Trailheads will be relocated and/or established trails will be rerouted in the same matter where trails present serious risk to POC, or provide other mitigation such a site hardening.	Minimize risk of introducing new *P. lateralis* infestations to uninfested Port Orford cedars	2500-100 Decommissioning road
Felled material is to be either removed, lopped and scattered and or piled and burned. Do not leave felled material to stay in treatment unit over one season.	Minimize risk of new insect infestation (Pine (*sp*) Bark Beetle)	

Heritage

Design & Mitigation Measure	Applies to
• Unevaluated sites will be treated as eligible for all actions. • No use of vehicles or other mechanized equipment within sites boundaries that are designated for avoidance. • No staging of equipment or materials within site boundaries. • In the event that cultural materials or human remains are discovered, all activities in the immediate area will stop, the area secured and the Forest Archaeologist and District Ranger will be notified immediately. Work will not resume in that area until the Forest Archaeologist has evaluated the material and has notified the District Ranger that the applicable requirements of 36 CFR 800 and NAGPRA have been completed.	All Activities
No treatments or ground disturbance are permitted within site boundaries, except in these cases, and provided: • If hand thinning is necessary within site boundaries, an archaeologist will identify features for avoidance Trees are felled away from all site features (i.e. buildings, ditches, trails). • No dragging of logs, trees, or thinned material across or within site boundaries or features. Forest archaeologist or Zone archaeologist will identify places to cross over eligible and unevaluated ditches and trails where there will be no effect to the site. • No landings or staging of equipment or materials within site boundaries • Harvested and thinned material may be removed and crossed over the Taylor Creek Trail. The proposed treatment area along Taylor Creek has been harvested before. Proposed landings along the Taylor Creek Trail should be located to maximize the least disturbance to the physical route and tread of the trail. • No staging or piling of slash and waste materials resulting from harvesting and thinning on site. • Slash material may be lopped and scattered within site boundaries. • Vegetation may be removed adjacent to historic trails and ditches to reduce fuel loading. Trees should be directionally felled away from feature. Very large trees (i.e. over 150 years old) should be retained if present. • Hauling routes, yarding and skid trail crossings of historic eligible and unevaluated ditches and trails will be avoided or minimized. If crossings are necessary for the removal of timber an Archaeologist or archaeological technician will work with timber staff to identify the minimal locations appropriate to cross eligible and unevaluated ditches and trails to avoid any	Vegetation Removal

Design & Mitigation Measure	Applies to
impacts to significant[1] characteristics and the physical integrity of the site. • Eligible and unevaluated ditches and non-motorized historic trails will not be used for skid trails, temporary roads, or hauling routes.	
Broadcast burning over non-combustible sites is allowed, provided: • No ignition points within site boundaries • No staging of equipment within site boundaries • No slash piles within site boundaries. One or more of the following measures will be implemented to protect fire-sensitive sites: • No slash piles within or adjacent to site features. • Exclude site from burn unit area. • Hand line • Black line • Wet line • Foam retardant • Structural fire shelter • Remove heavy fuels from site by hand. • Prevent in-situ heavy fuels that cannot be removed from ignition (e.g., flush-cut & bury stumps). The same protective measures will be implemented for future maintenance burns.	Prescribed Fire Treatments
• Avoid ground disturbance to historic eligible and unevaluated trails and ditches; trail alignments will not be rerouted. • Maintenance of historic trail tread surface materials will not be changed from the existing type of materials; intact contributing segments of ditches will not be obliterated or rerouted. • Large boulders, vegetation or berms may be placed on top of or next to trails and ditches to close area from motorized access.	Road Decommissioning
See measure listed under vegetation removal No protection measures for Onion Mt. Road (06102200759/ SK-0759). Road was determined not eligible with SHPO concurrence.	Existing roads, and construction of temporary roads for hauling
N/A, No sites present.	Stream Crossing Improvements

Recreation & Visuals

Objective	Design & Mitigation Measure
A. Minimize conflicts between recreationists (other forest visitors) and harvest activities.	A1. Utilize partial area closure during harvest operations to minimize the potential for accidental injury to recreationists during logging operations (recreation). A2. Utilize signing, press releases, and work with local user groups to redirect recreation activities to safe use areas during harvest operations (recreation). A3. Purchaser will be required to set up logging operation warning signs. A4. Restrict log hauling during high recreation use periods (weekends, holidays).

[1] "Significant" as defined by the National Register Bulletin #15 (USDI 1990)

Objective	Design & Mitigation Measure
B. Minimize conflicts between harvest operations and permitted special use recreation events.	B1. Restrict log hauling on roads involved with permitted special use events during the scheduled events (recreation).
C. Protect Recreation Improvements (trails, trailheads, signs, etc.)	C1. Identify recreation improvements on sale area map; protect, repair and restore any damage caused by harvest operations. C2. Trees should be directionally felled away from trails and skidded across trails, not down to minimize impacts to trail tread.
D. Minimize impacts to Scenic Quality.	D1. Low cut stumps along roads in High Visual Sensitivity Level areas and adjacent to trails. D2. Pile and burn slash at least 50 feet from trail tread to retain small trees and vegetation adjacent to the trail. D3. Pile and burn slash at least 300 feet away from roads in High Visual Sensitivity Level areas.